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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/330,134	06/11/1999	ALAIN BETHUNE	103602	9029

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EXAMINER

CROCKFORD, KIRSTEN ANNE

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 06/19/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/330,134

Applicant(s)

BETHUNE, ALAIN

Examiner

Kirsten Crockford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18,30-42 and 45-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18,30-42 and 45-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 2, 2002 has been entered.

Response to Arguments

2. Applicant's arguments filed April 2, 2002 have been fully considered but they are not persuasive. The claims are now rejected in response to Applicant's amendments as set forth below. Applicant's arguments with respect to the rejections are addressed below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 12-15, 48-51, and 74 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 12 reads on coating the

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entire surface of the article which appears to be new matter. In a different embodiment where the outer surface is coated, the specification teaches coating the remainder of the outer surface of the article which is not covered by said predetermined quantity of coating spreading under the effect of centrifugal force to thereby coat the entire *outer* surface. If Applicant can locate disclosure in the specification where the entire surface of the article is coated subsequent to the embodiment where the inner surface is coated by centrifugal force, then they should so state the location of such disclosure on the record. It is noted that claims 14 and 15 are directed to nozzle 6 of Applicant's drawings; it is noted that Applicant states at page 10, lines 31-32, of the specification that "nozzle 6 is not used when coating is being deposited on the inside surface of the article."

Similarly, claim 48 reads on applying a coating to the inside of a hollow container where there is an additional step of "applying the coating directly to a surface of the article which is not covered by said predetermined quantity of coating spreading under the effect of centrifugal force." As discussed above, the specification does not appear to disclose the step of applying coating directly on a surface not covered by centrifugal spreading in the embodiment where the interior surface of a hollow article is coated. If Applicant can locate such disclosure in the specification, then they should so state the location on the record.

With respect to claim 74, as stated above, a coating "applied directly to the *entire* surface of the article which is not covered by said predetermined quantity of coating spreading under the effect of centrifugal force [emphasis added]" appears to be new matter.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 70 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 70 recites the limitation "the top edge of the article" and "after rising up the side wall" in lines 2-3. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. Claims 41, 63, 65-66, 68, 71-72, and 80-81 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki (5,002,799).

Iwasaki is cited for the same reasons set forth in the prior Office actions. Iwasaki is directed to coating the exterior surface of a face plate of a cathode ray tube. Upon further

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reconsideration, it is the Examiner's position that a face plate of a cathode ray tube meets the limitation of a container lid; therefore, the process of Iwasaki meets the limitations of claims 41, 63, and 81. Further, as to claim 80, it is Examiner's position that the coating material disclosed by Iwasaki would inherently meet the limitation of a paint for the cathode ray tubes.

As to claims 65 and 66, Iwasaki teaches baking the coating on the face plate substrate (col. 8, lines 7-15). The coating is inherently heated/exposed to the claimed temperatures as the substrate's temperature is gradually increased from ambient room temperature to the baking temperatures taught in Iwasaki. As to claims 68 and 72, Figure 8 illustrates that the side walls are parallel to the axis of rotation and the bottom surface is substantially planar. As to claim 71, Iwasaki teaches that rotation of the article is stopped after the coating has spread over the entire substrate -- the amount of spreading desired.

10. Claims 34, 36-40,⁴⁵ 52-54, and 58-59 are rejected under 35 U.S.C. 102(e) as being anticipated by Anai et al. (US 6,165,552).

As to claims 34, 38-40, and 54, Anai et al. teaches a method of spin coating on a rectangular, planar semiconductor substrate with resist solution whereby a resist solution is supplied to the center of the substrate Ra, and resist solution is supplied to four corner portions Rb-Re of the substrate (col. 16, lines 1-34 and Figures 20, 21, and 26). Anai et al. teaches at col. 16, lines 21-23 that concentric circle 88 indicates a range which the resist solution diffused from the portion Ra can reach. Therefore, the supplying of resist solution according to this embodiment of Anai et al. meet Applicant's claim limitation of "applying the coating directly to

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a surface of the article which is not covered by said predetermined quantity of coating spreading under the effect of centrifugal force.”

As to claim 37, Anai et al. teaches that arm 253 on which the resist nozzles are located is movable/retractable. As to claim 52, it is noted that the top surface of the semiconductor substrate may be considered the outside of the article. As to claim 53, Anai et al. teaches depositing resist while the substrate is not rotating (col. 17). As to claim 58, it is noted that the term “paint” is broad and is inclusive of the resist coating applied to the semiconductor substrate.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 78-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (US 5,002,799) in view of Iwasaki (US 5,599,579).

Iwasaki '579 is applied for the same reasons set forth in the prior Office actions with regard to claims 16-17.

12. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anai et al. (US 6,165,552).

Anai et al. does not teach that the resist solution is applied onto the substrate in portions Rb-Re while the substrate is spinning. However, it is well known in the spin coating art to apply

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coating materials on substrates while the substrates are already spinning. It would have been obvious for one skilled in the spin coating art to have applied resist to portions Rb-Re while the substrate was spinning with the expectation of similar and successful results.

13. Claims 1-11, 16-18, 30-33, 42, 63-71, 73, and 78-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (US 3,804,663).

As discussed in the prior Office actions, Clark discloses a method for uniformly spin coating the interior walls of a hollow article such as a container. With respect to claims 1, 5, 6, 18, 30, 63, 67, 68, and 80, Applicant requires the limitation that the deposited quantity of coating on the inner surface of the bottom of the hollow article does not contact the side wall of the article. Applicant argues that Clark fails to disclose avoiding the side wall, and that in Figure 4 Clark applies the coating to the side walls and bottom wall using a spray. Applicant argues that, while Clark teaches pouring coating into a container as an embodiment, it is neither taught nor disclosed to pour the coating in Clark such that the coating does not come into contact with a side wall.

Clark discloses “placing,” “pouring,” or “brushing” the coating composition in the container to be coated prior to starting spinning (col. 1, lines 47-48, col. 4, lines 44-45, col. 5, lines 34-35 and 68). It is the Examiner’s position that these methods do not read on initially depositing the coating in contact with a side wall. It would have been obvious for one having ordinary skill in the art to have placed, poured, or brushed the coating composition onto the center of the bottom surface of the container with the expectation of successful results, for

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example by pouring the coating from a height just a fraction of an inch above the bottom so that no splashing and little to no spreading occurs, in the absence of a showing of unexpected results.

As to claims 2 and 64, Clark does not specifically disclose that the coating is without organic solvent. It is Examiner's position that these coating materials would be suitable for use without an organic solvent in the manner claimed by Applicant. As to claims 3, 4, 31, 65, and 66, Clark discloses a step of heating to dry or fuse the coatings after they have been applied.

While Clark does not specifically teach using a temperature in the claimed ranges, the Examiner notes that the temperature needed for drying or fusing would be dependent upon the particular coating material being used, the desired characteristics of the final coating, etc. It would have been obvious to one having ordinary skill in the art to have determined the optimum heating temperature through routine experimentation in the absence of a showing of criticality. *In re Aller*, USPQ 233 (CCPA 1955).

With respect to claims 7 and 69, it is noted that Clark illustrates an embodiment using a bottle with a stepped side wall in Figure 3. As to claims 8 and 70, Clark illustrates coating sufficient to cover the top edge of the article after rising up the side wall in Figure 1. As to claims 9 and 71, the rotation is inherently stopped after the coating has spread by the desired amount. As to claim 10, Clark illustrates coating containers with planer bottom surfaces in Figures 1 and 3. As to claims 11 and 73, Clark teaches that the coating is applied to the bottom of the container prior to starting rotation of the container (col. 4, lines 44-48). As to claims 16 and 78, Clark teaches use of plastic materials such as saran, polyvinyl chloride, polyamide, olefins, acrylonitrile, epoxy or other like plastic resins of co-polymers or blends thereof. Some of these plastic materials are inherently capable of being cured by ultraviolet radiation. As to

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claims 17 and 79, it is noted that Clark teaches that curing occurs while the article is still in rotation at col. 1, lines 53-54.

Independent claim 32 and claim 33 are additionally limited to stopping rotation of the article *suddenly* after the coating has spread by the desired amount. Clark discloses a comparative example in col. 5, lines 19-24, whereby the rotation of the article was stopped after spreading and before drying. While Clark discloses that this embodiment does not produce as desirable results, it none-the-less teaches that it is known to stop spinning directly after spreading. Additionally, in this scenario it would have been obvious for one having ordinary skill in the art to have stopped spinning once the coating reaches the desired height in order to prevent coating from being spread to a height higher than desired.

14. Claims 34-40, 46-47, 52-54, 57, 58-62, 72, and 74-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (US 5,002,799) as applied to claims 41, 63, 65-66, 68, 71-72, and 80-81 above and further in view of Anai et al. (US 6,165,552).

Iwasaki is directed to coating the exterior surface of a face plate of a cathode ray tube, which is considered to be a container lid, as discussed above in paragraph 9. Iwasaki lacks the disclosure of a step of applying its coating to a surface of the article which is not covered by said predetermined quantity of coating spreading under the effect of centrifugal force, i.e., to the corners of the rectangular face plate. Iwasaki discloses in col. 5, lines 4-19, problems with coating irregularities in conventional spin coating processes at the corners of the face plate. One skilled in the art would have been motivated to look to other spin coating processes to determine methods for forming even coatings particularly at the corners when using rectangular substrates.

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Anai et al. accomplishes this problem by providing its coating solution at the corners of the rectangular substrate in addition to supplying coating material at the center of the substrate. It would have been obvious for one having ordinary skill in the art to have used the method of Anai et al., specifically providing coating material at the corners of the substrate in addition to the center portion, with the expectation of achieving improved, uniform coating on the entire substrate. The limitations of the dependent claims are discussed above with respect to the Anai et al. and Iwasaki references.

15. Claims 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (US 5,002,799) in view of Anai et al. (US 6,165,552) as applied to claim 34 above and further in view of Iwasaki (US 5,599,579).

Iwasaki '579 is applied for the same reasons set forth in the prior Office actions with regard to claims 16-17.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 54-93015 A is cited for its teaching of coating the interior of a hollow article by spin coating.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten Crockford whose telephone number is 703-306-5461. The examiner can normally be reached on Monday to Thursday and every other Friday.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

kac

June 17, 2002


MICHAEL BARR
PRIMARY EXAMINER